





# Climate Matters

- Started with an NSF partnership: Ultimately including George Mason, Yale, AMS, NWA, NOAA, NASA, and Climate Central
- Developed to convey the science of climate change to the public via *broadcast meteorologists*
- 286 Broadcast Meteorologists
- 191 Stations (35 Spanish Language)
- 109 Media Markets (out of possible 210)

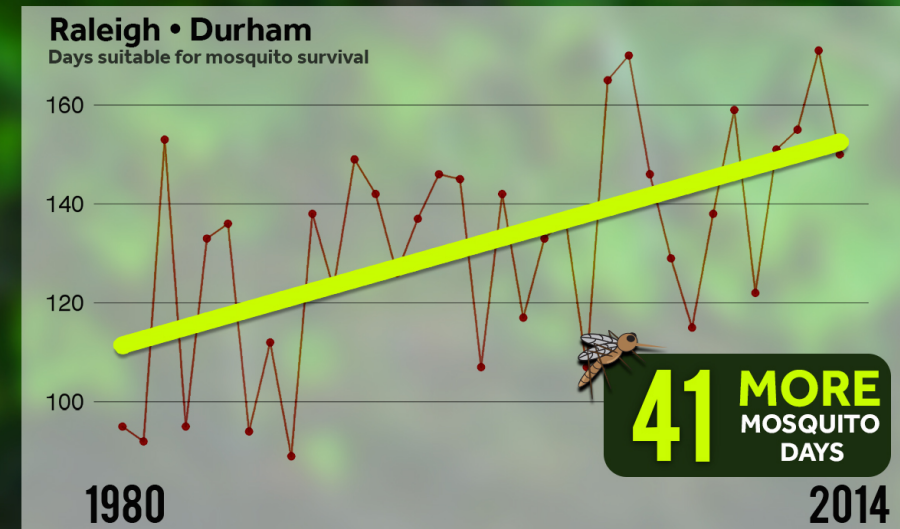


John Morales – WTVJ,  
Miami



# BUZZKILL

Mosquito Season  
Getting Longer



Source: Yamana and Eltahir (2013), NCBI, National Institutes of Health Daymet Data, Oak Ridge National Laboratory

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## KANSAS CITY HALLOWEEN EXTREMES


WARMEST: **87°** 1950

COOLEST: **17°** 1993

WETTEST: **1.5"** 1900

SNOWIEST: **1"** 1912

Source: RCC-ACIS.org -- Applied Climate Information System

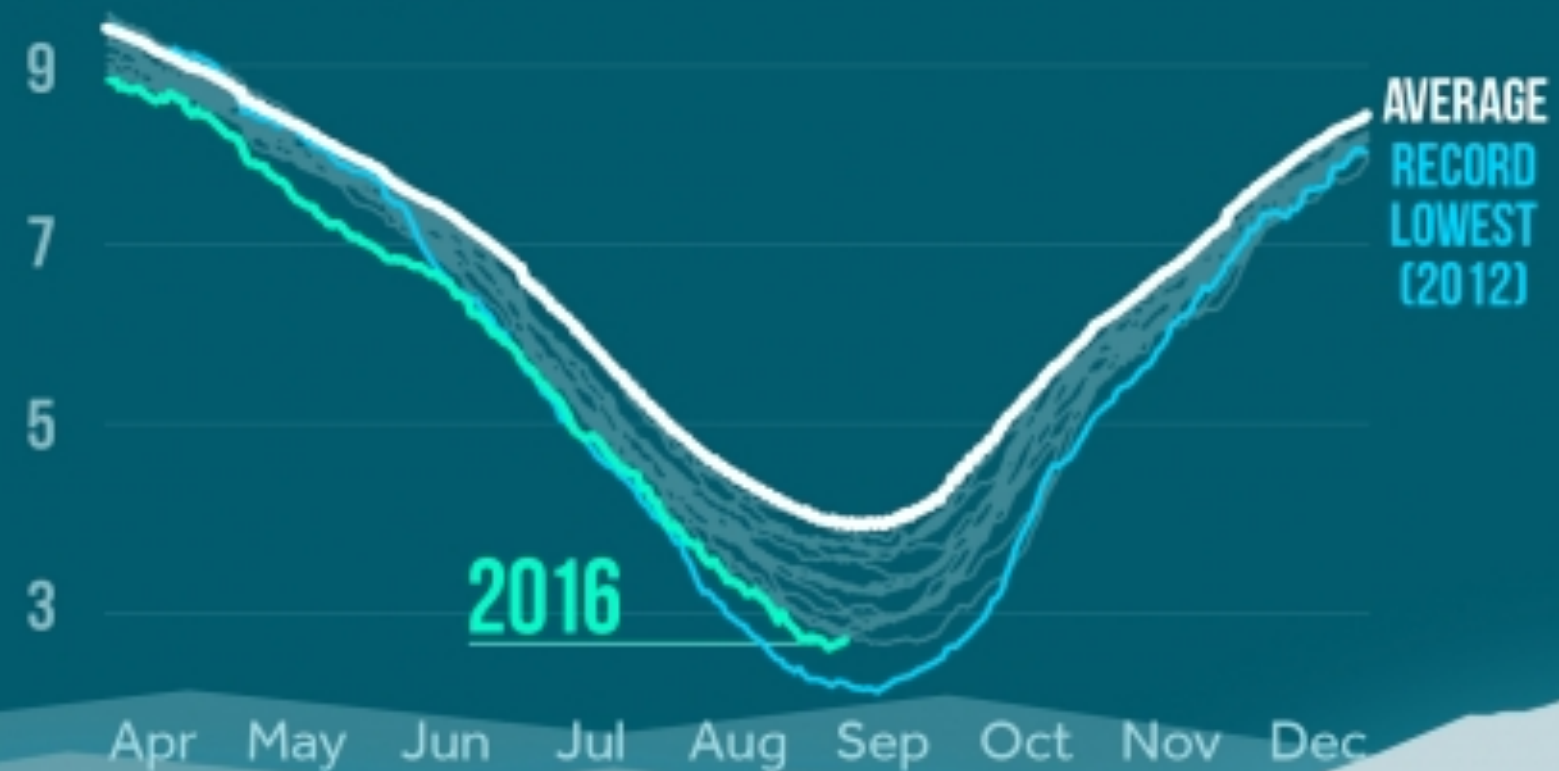
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# ARCTIC SEA ICE EXTENT

All Years Below Average Since 2002

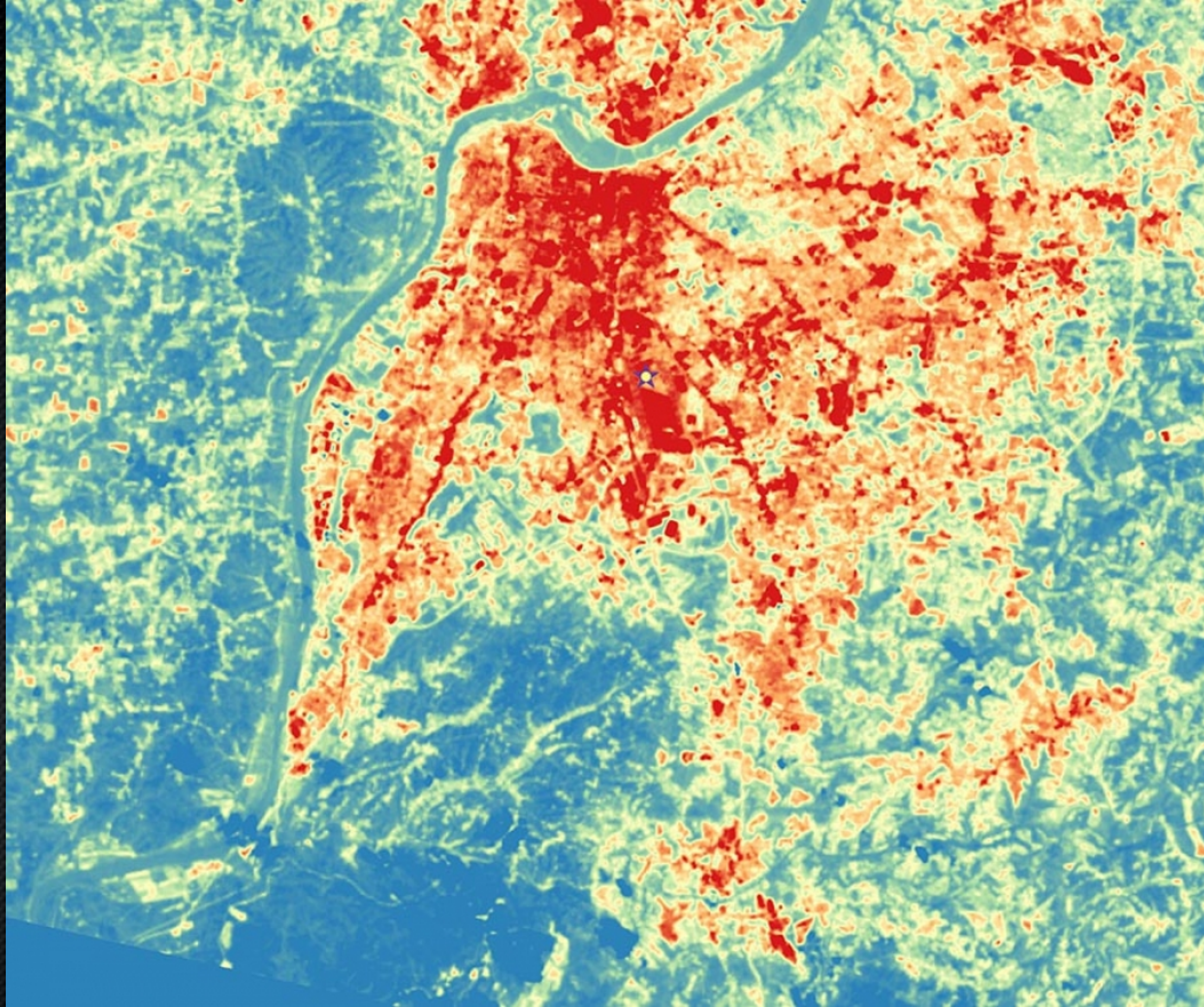
(Million square miles)



Source: National Snow & Ice Data Center

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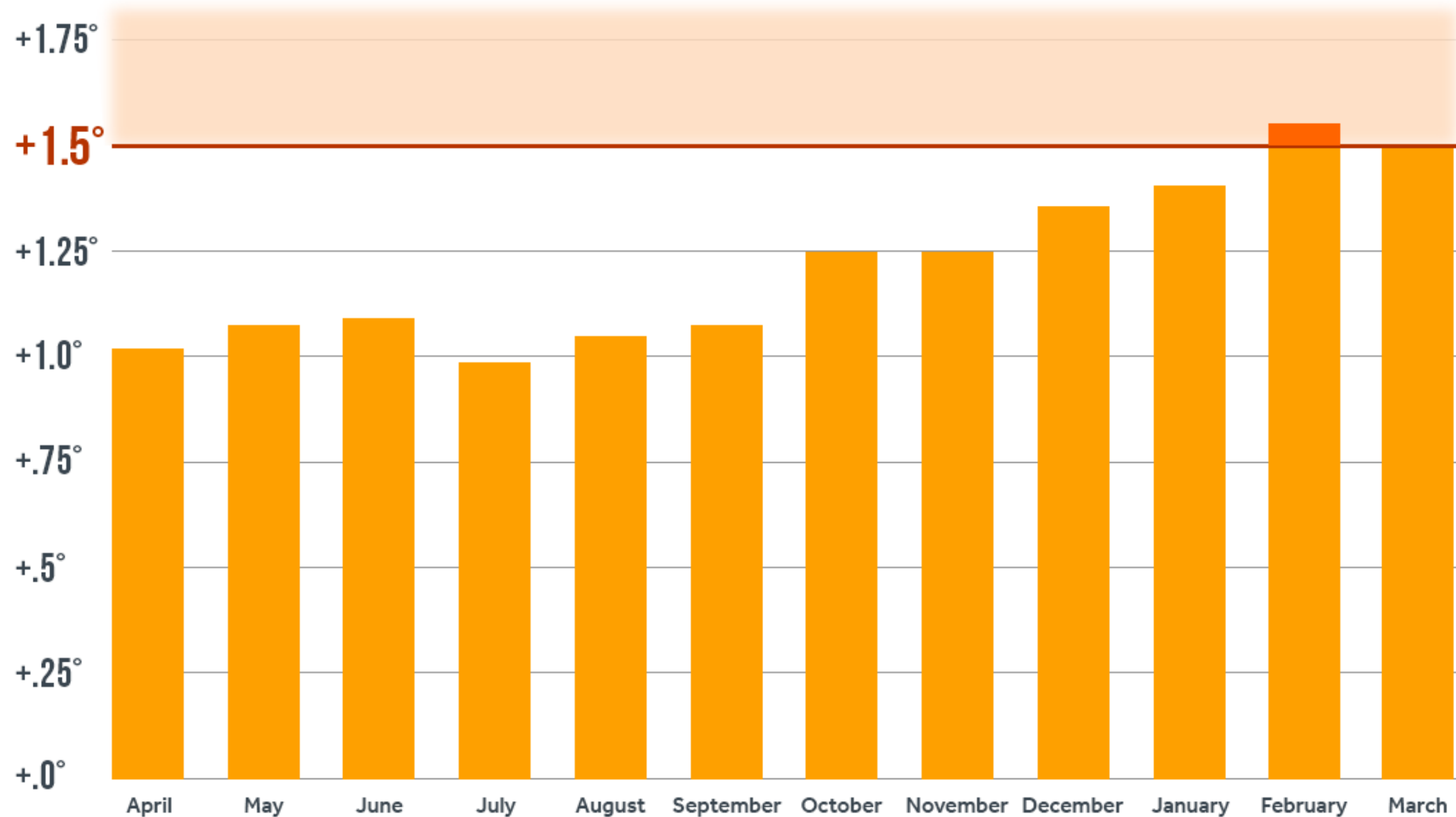






# On the Edge of 1.5°C

Global monthly temp anomalies referenced to 1881-1910 baseline



Average of NOAA and NASA data adjusted to an 1881-1910 baseline. Data as of April 2016.  
NASA reports global temperature change in reference to a 1951 to 1980 climate baseline.  
NOAA reports the anomaly in reference to a 20th century average temperature.



# Where Your Summer is Headed



Future summer temperatures based on continuing with current emissions trends.  
Current temperatures: PRISM Climate Group, Oregon State University, <http://prism.oregonstate.edu>, accessed July 1, 2014.  
Projected temps: CMIPS multi-model ensemble dataset.

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Global shifting cities using Global Downscaled Daily [Climate] Projections

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Enter a global coastal place

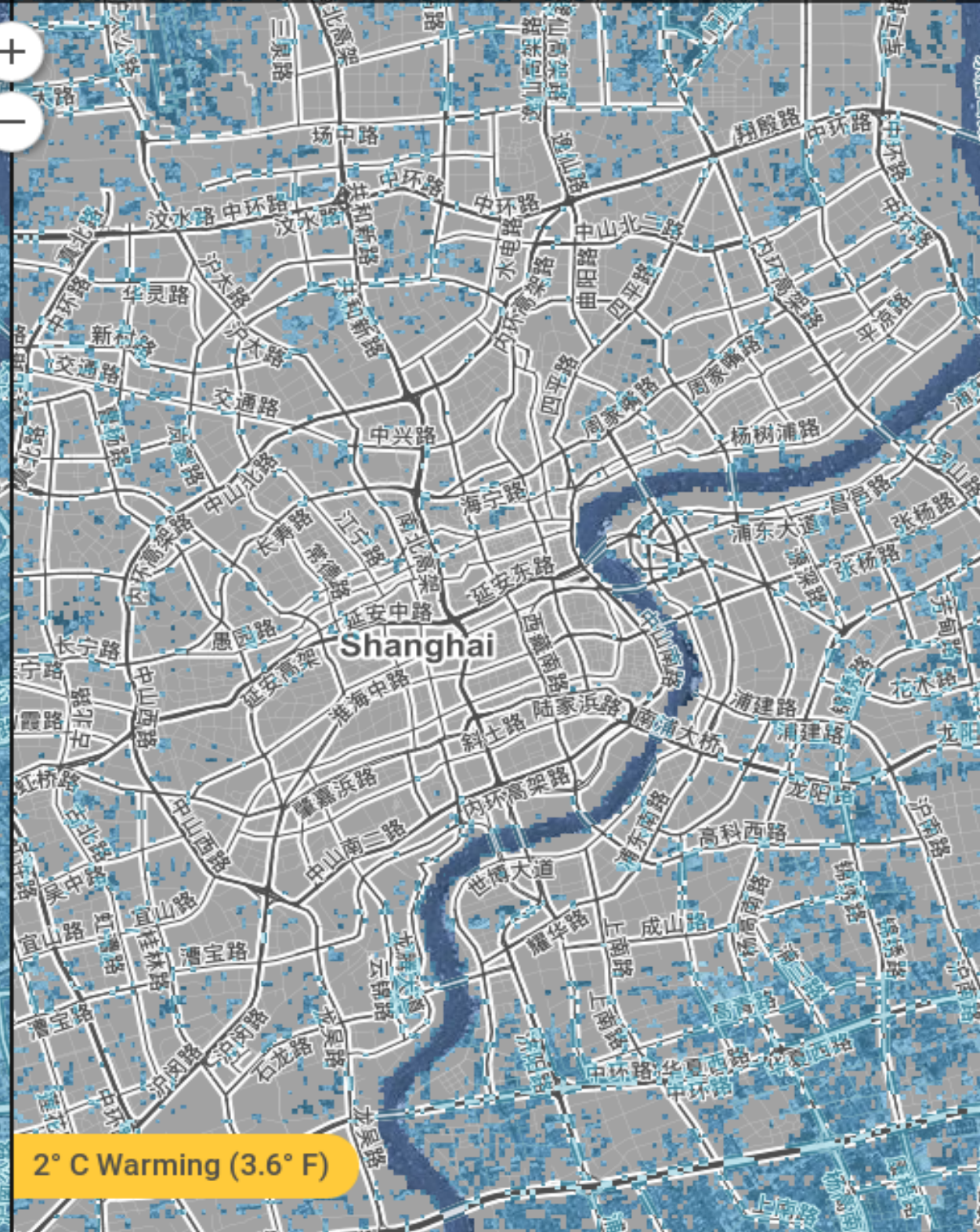


Which sea level will we lock in?

When will this happen?



4° C Warming (7.2° F)



2° C Warming (3.6° F)

Elevation data  
from Shuttle Radar  
Topography Mission





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# WESTERN WILDFIRES

A Fiery Future

Alyson Kenward, PhD, Todd Sanford, PhD, James Bronzan

June 2016



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# THE AGE OF ALASKAN WILDFIRES

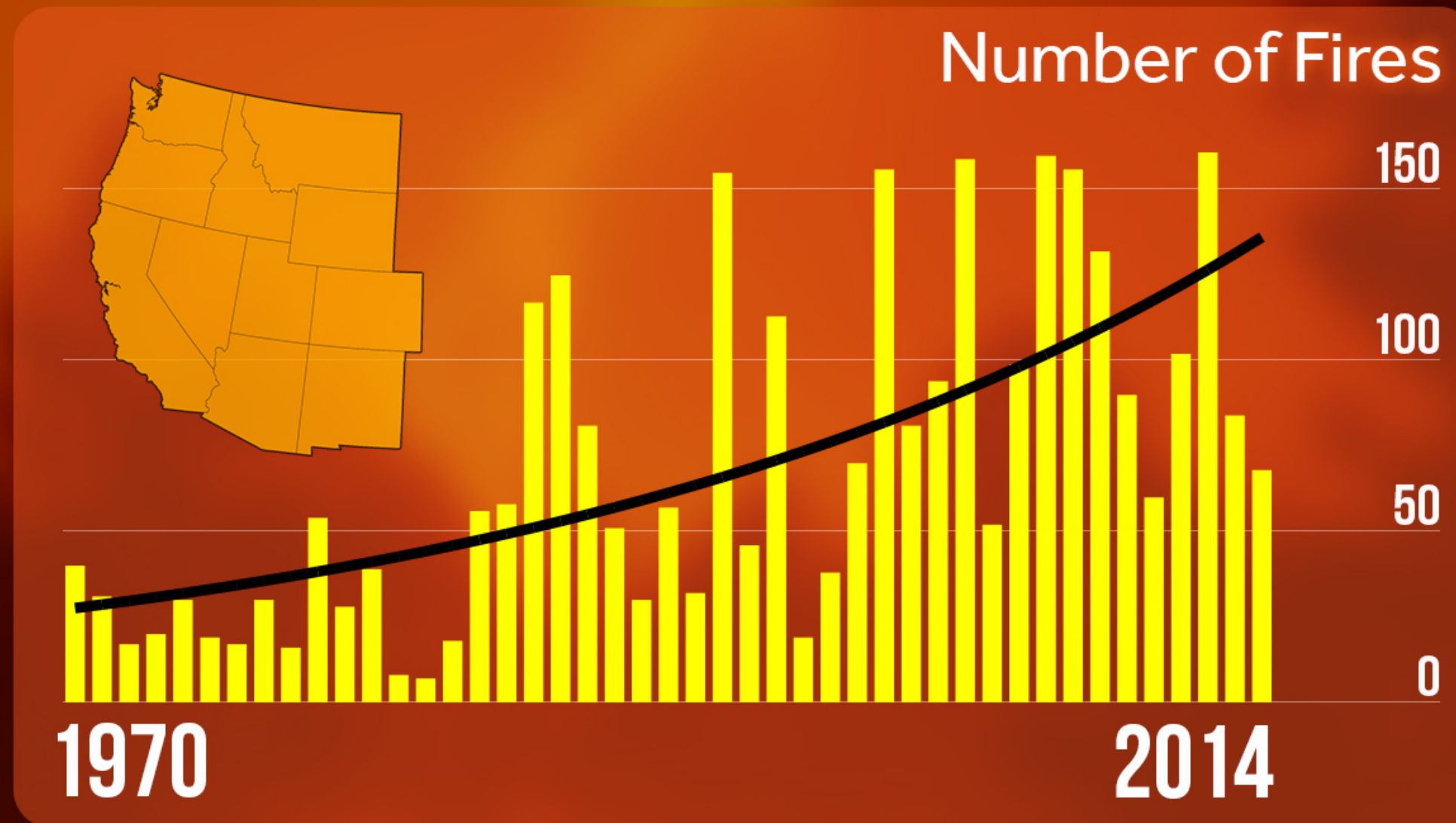
Todd Sanford, PhD, Regina Wang, and Alyson Kenward, PhD

2015



# MORE LARGE WILDFIRES

## Western States

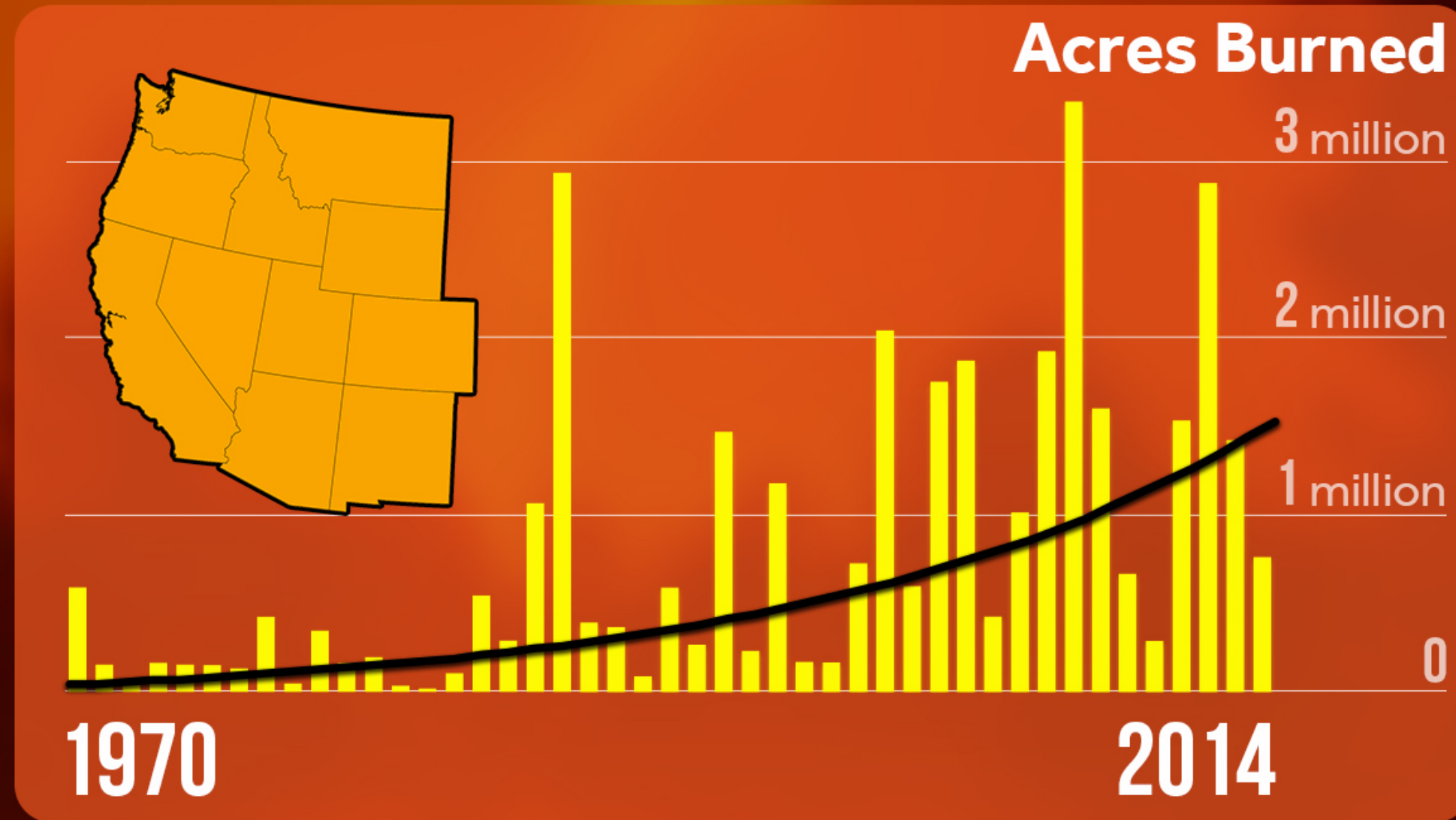


Source: Climate Central



# MORE ACRES BURNING

## Western States



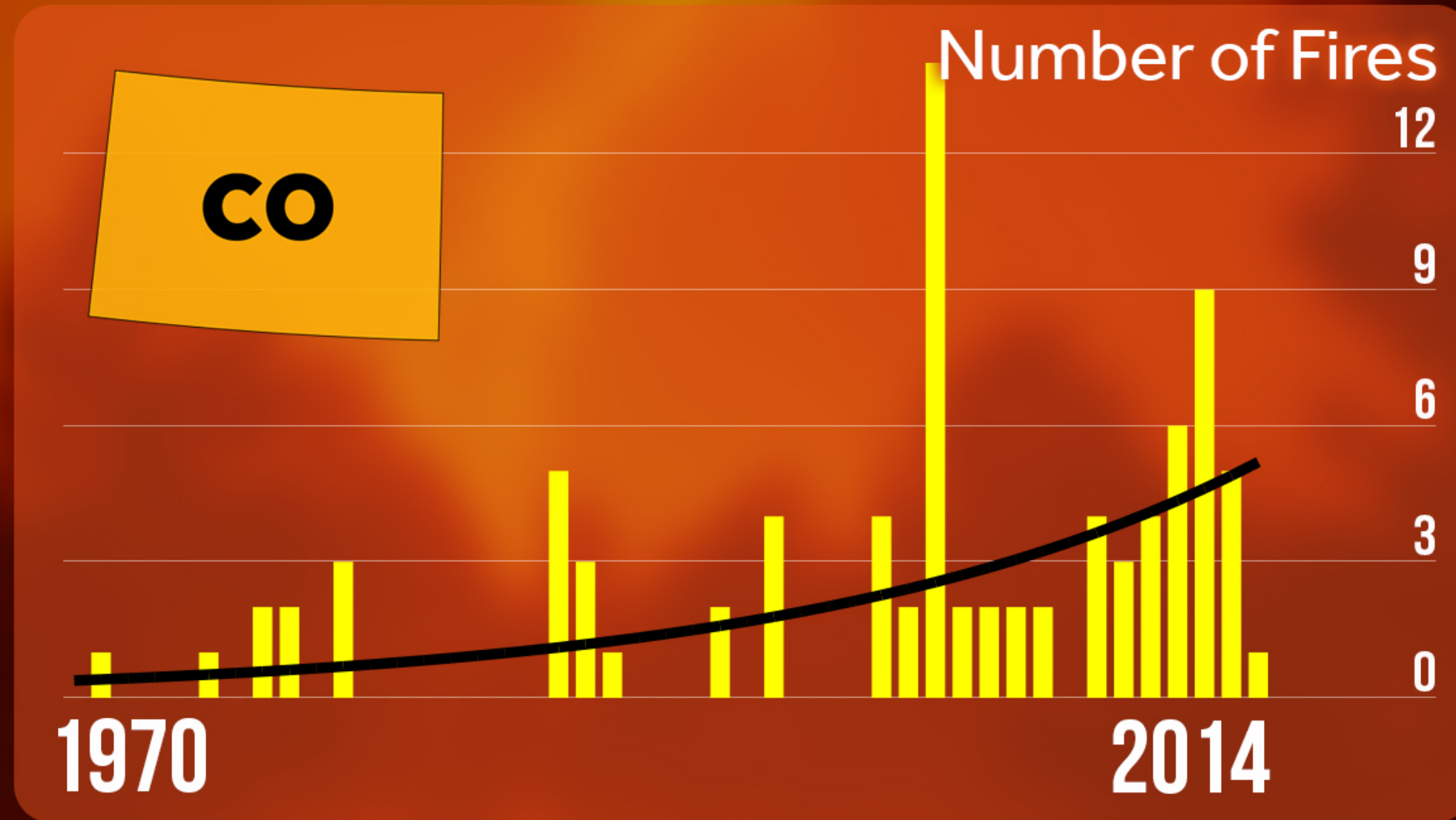
Source: Climate Central

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# MORE LARGE WILDFIRES

## Colorado

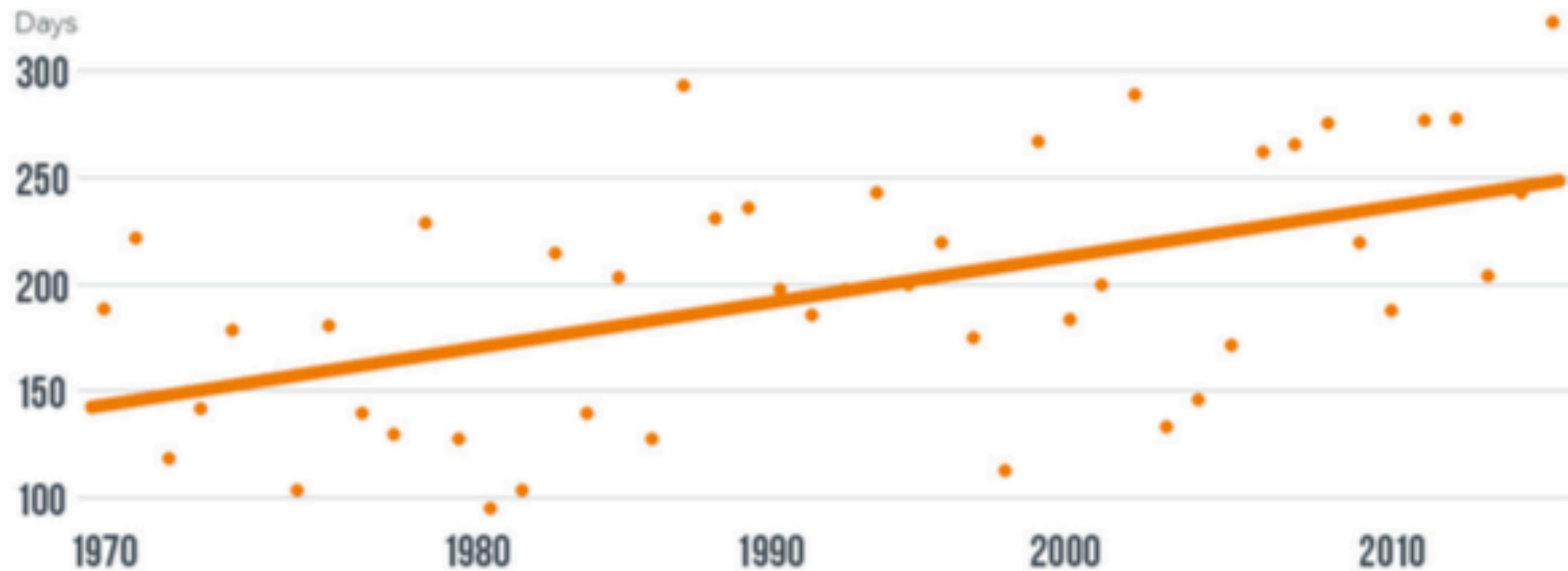


Source: Climate Central



# Wildfire Season is Growing Across the West

Length of Annual Burn Season



Source: Climate Central analysis of U.S. Forest Service records

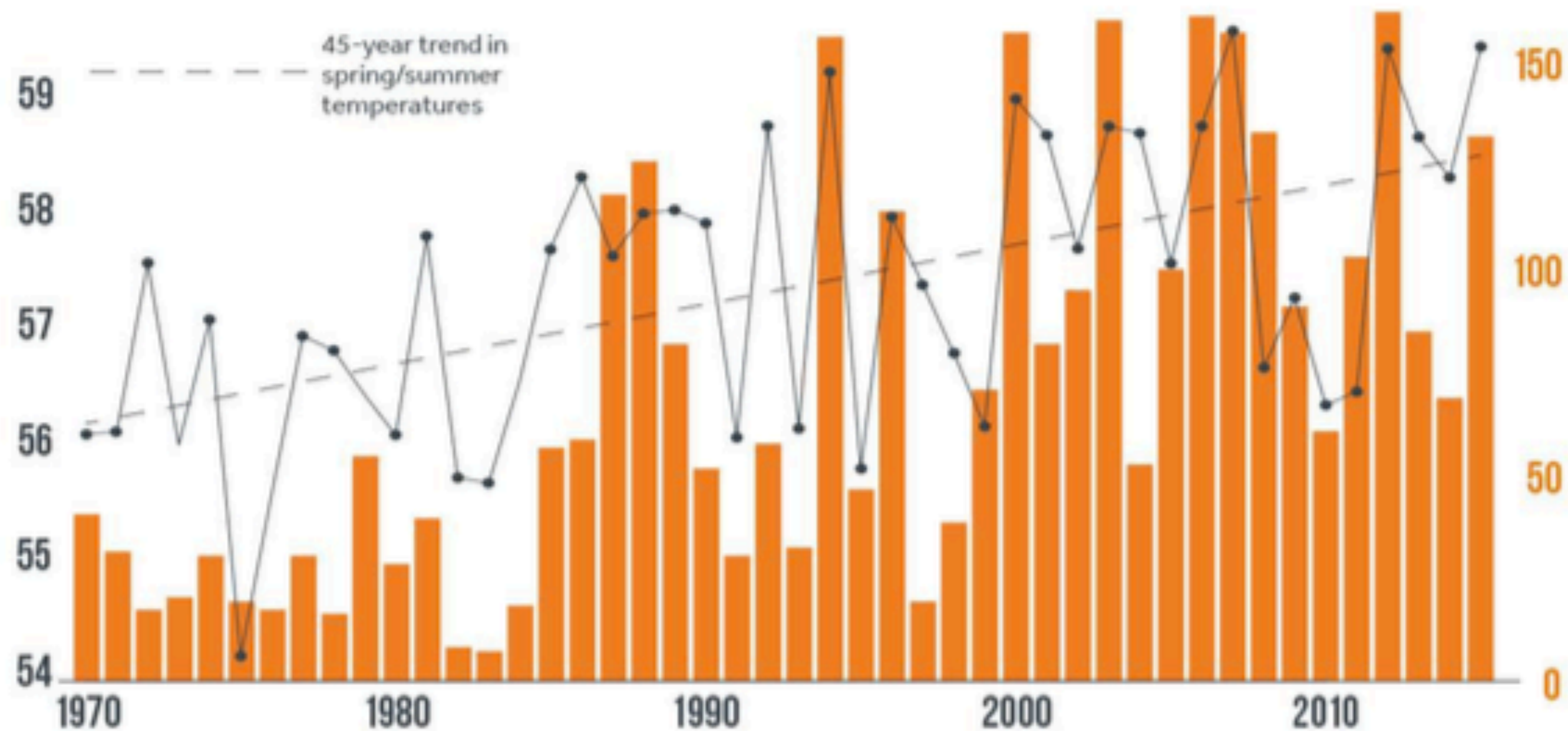
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# Hotter Years Typically Have More Large Fires

Average Spring/Summer  
Temperatures (°F)

Large Fires on  
Forest Service Land

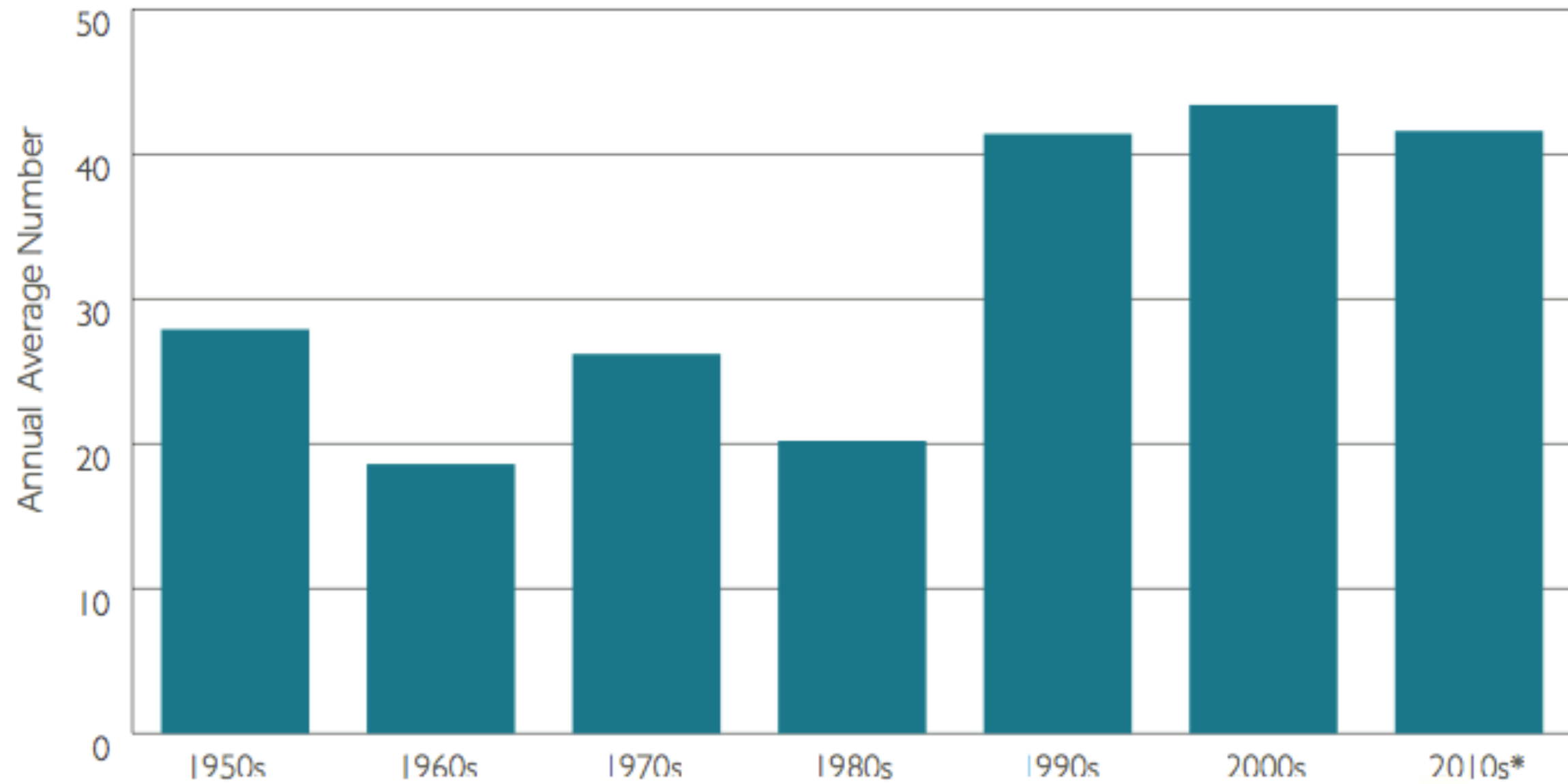


Source: NCEI/Climate-at-a-glance (temperature); Climate Central analysis of U.S. Forest Service Records (fires)

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## Decadal Averages of Annual Large Wildfires in Alaska

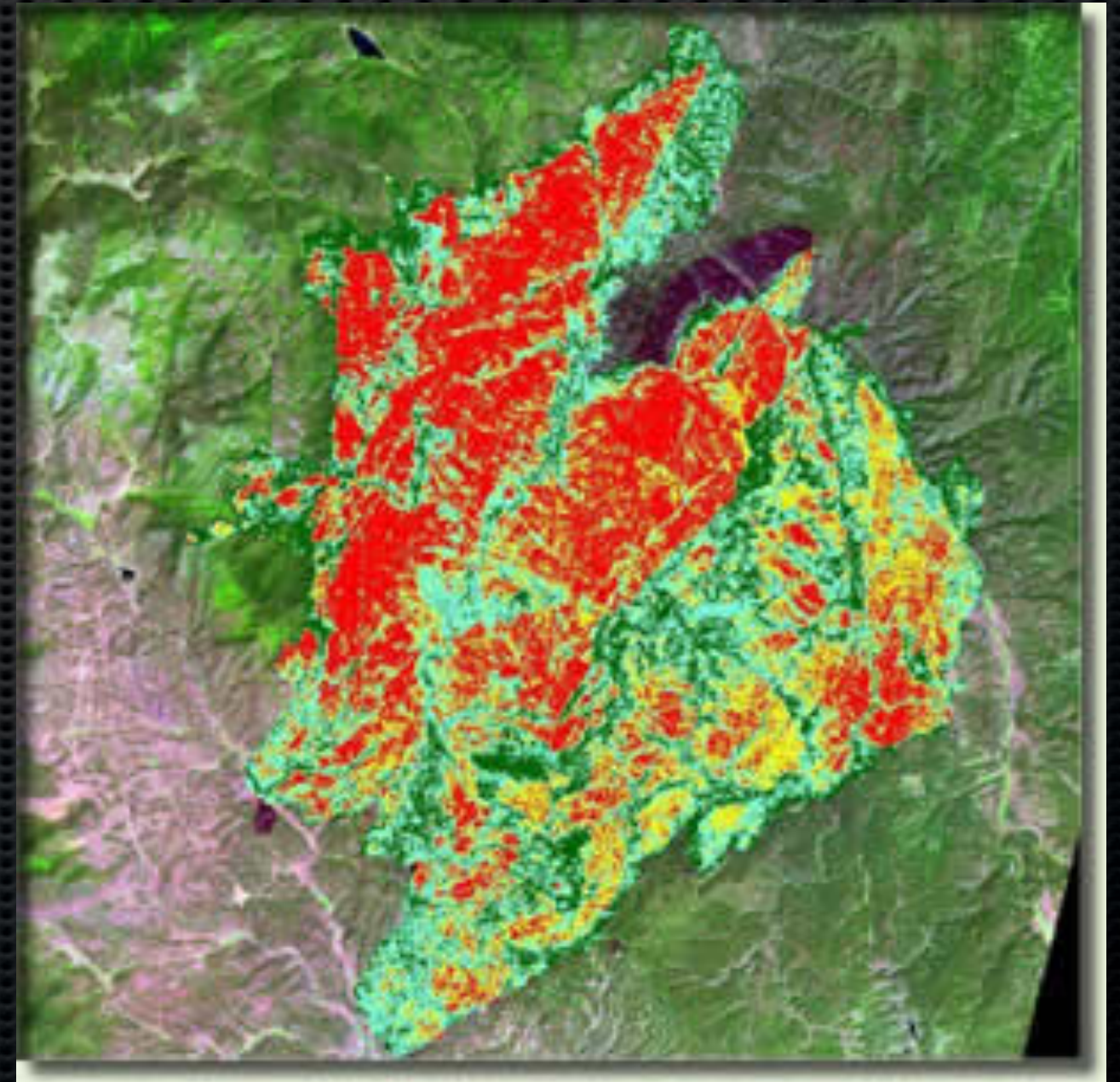








## Monitoring Trends in Burn Severity (MTBS) and Landsat



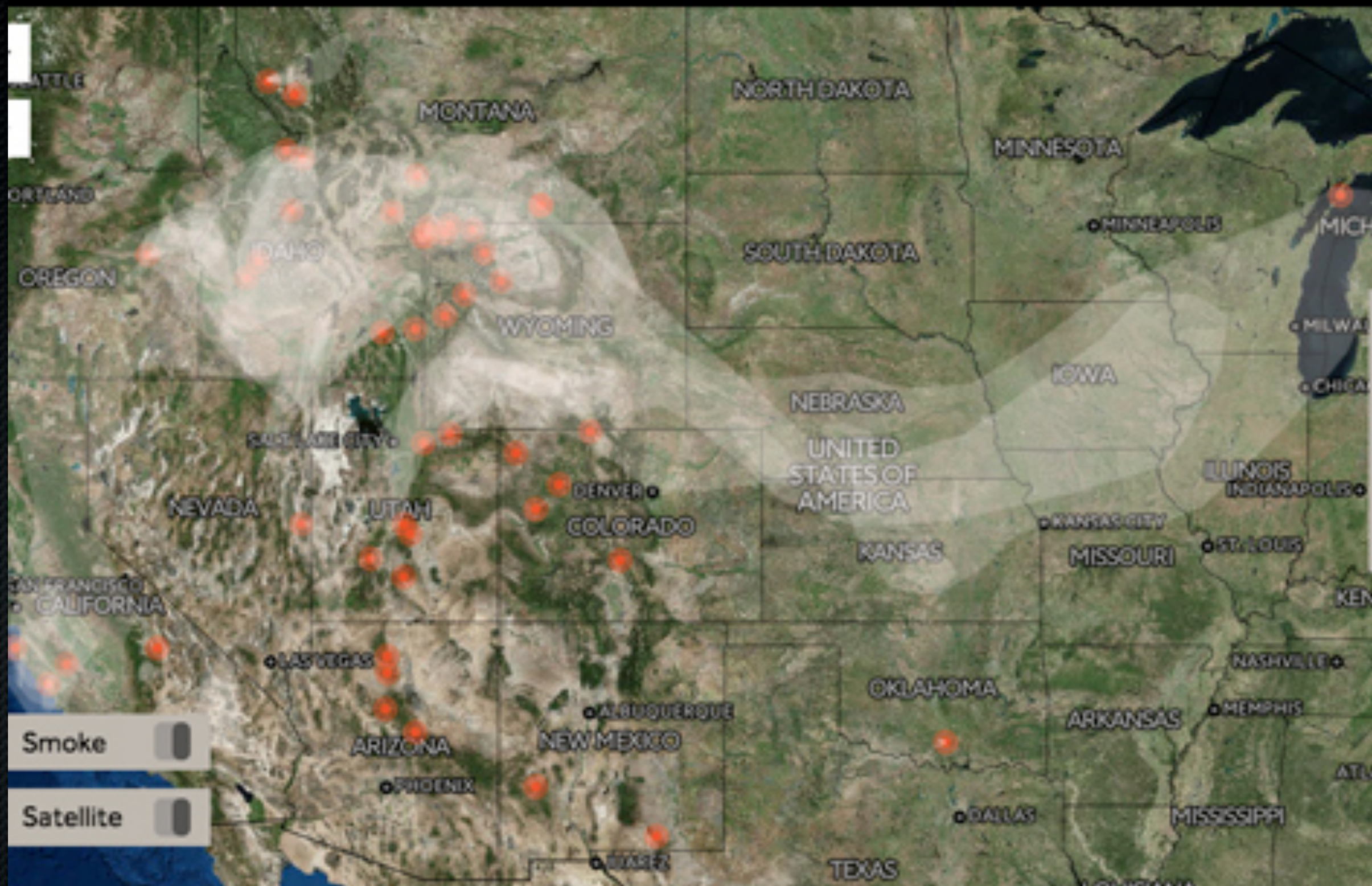


# U.S. Wildfire Tracker





# U.S. Wildfire Tracker



Largest fire burning:

**76,980  
ACRES**

Western wildfire season

**105 DAYS  
LONGER**

Large fires currently  
burning in the U.S.

**61**